10 per cent. solution, some other solvent must have been added to the water. —ED.]

A grain of the pure acid may be given at a dose.

In some cases the relief is speedily afforded, and the patients often begged for a repetition of the injection when another joint became painful.

It is said to be of special value in cases of gonorrhœal rheumatism in which no relief has followed the use of salicylates, but does not seem to act so well when many of the joints are affected.

It is best to pass the point of the hypodermic needle through the skin obliquely, and judging where the synovial membrane is, to inject the fluid as close outside the sac as possible.

Injected into the sac itself a 10 per cent. solution of carbolic acid precipitates the albumin present in the serous contents.

The *rationale* of the rapid disappearance of all the symptoms is, first, that it is due to the powerful local anæsthetic action of the acid; secondly, to some slight specific action against the rheumatic poison exerted by it.—*Medical Press*, 1891, No. 2719.

MEDICINE.

UNDER THE CHARGE OF

W. PASTEUR, M.D. LOND., M.R.C.P.,
ASSISTANT PHYSICIAN TO THE MIDDLESEX HOSPITAL; PHYSICIAN TO THE NORTHWESTERN HOSPITAL FOR CHILDREN;

AND

SOLOMON SOLIS-COHEN, A.M., M.D.,
PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS IN THE PHILADELPHIA POLYCLINIC; PHYSICIAN TO THE PHILADELPHIA HOSPITAL.

MALARIA ON THE GOLD COAST.

DR. W. T. PROUT, in *The Practitioner*, No. 291, 1891, states that the varieties of malaria met with on the Gold Coast of Africa are the same as elsewhere, but there is a tendency toward irregularity and severity in type, especially among Europeans. Well-marked quotidian, tertian, and quartan ague is rare, and met with among natives or in Europeans who have been long resident on the Coast, in whom the type approximates more closely to that observed in the native. In such cases the attack is essentially mild, of sudden onset, with shivering or chilliness, rapid rise of temperature to 104° or 105°, with headache, lumbar pain, etc., followed by a copious sweat and return to health on the next day. In natives, constipation and hepatic torpor are frequently associated, and the attack can be cured by a dose of blue pill. In newly arrived Europeans the attack is usually more severe, and comes under the head of bilious remittent. The cold stage is usually not observed, nausea is invariably present, and frequently vomiting forms a dangerous symptom.

Besides splenic enlargement and tenderness, there is tenderness over the pyloric end of the stomach, and at times along the hepatic margin of the ribs. The stools are dark bottle-green in color and offensive. The attack lasts four to six days, leaving the patient in a very exhausted and anæmic state, from which he slowly recovers.

The third type is the hæmoglobinuric form, which is fortunately the rarest, as it is the most severe and the most dangerous (*Lancet*, 1891, No. 3544). It rarely occurs in Europeans who are in robust health, but in those who have become debilitated and anæmic from repeated attacks of fever, or from mental worry or alcoholic or other excess. Dr. Prout inclined to associate it more particularly with any cause which interferes with the action of the liver, as he has seen it occur several times in beer-drinkers. The onset is sudden, accompanied, it may be, with slight shivering. Vomiting commences early, and is a prominent and intractable symptom throughout. At first it consists of bile, and latterly merely of the liquids imbibed, mixed with dark-green, shreddy particles. The tongue and breath are foul, and there is great thirst The skin, conjunctivæ, and buccal mucous membranes are of a bright canary-yellow color. The temperature need not necessarily rise very high, and may even fall to normal, though the other symptoms persist. If after this there is a constantly rising temperature without remissions, the prognosis is unfavorable. The state of the urine early attracts the patient's attention. In the worst cases it is of a dark porter-like color, is almost syrupy in consistence, froths easily, and stains the sides of the vessel containing it a bright crimson. At this stage boiling and nitric acid show the presence of considerable quantity of albumin. A copious deposit forms on standing, which is seen to consist of pigment granules and pigment casts from the kidneys. A few blood-cells may be present, but they are not common. The quantity of urine is generally diminished. Recovery may take place, and in this case the general symptoms improve, the urine gradually becomes less high colored, increases in quantity, and becomes loaded with urates. Convalescence is naturally slow, and departure from the Coast is indicated. On the other hand, the symptoms may become aggravated; the urine diminishes in quantity, although the color generally improves, and total suppression may take place. Death in these cases results in from three to five days from uræmia and exhaustion.

The blood was examined in ten cases, partly native, partly European. They include two cases of bilious remittent, one of hæmoglobinuria, the rest being of the mild remittent type.

In eight cases distinct changes were observed in the red corpuscles. These were of five kinds:

1. Brightly refracting, rod-like bodies occurred in three cases, and in one of them were very numerous. They varied considerably in number and size, and appeared to possess a certain power of movement, which was possessed also by the other intra-corpuscular forms, which was rather pulsatile than an an amœboid movement, although occasionally a slow alteration of their position in the corpuscle took place.

2. Brightly refracting round spots of various sizes, sometimes combined with the rods in the same corpuscle.

3. Large circular bodies, like vacuoles, lying in the centre or at the side of the corpuscle. Rods may also be seen along with these.

4. Irregular bodies, which may be regarded as transition stages between the above forms.

5. In three cases there were peculiar bodies, which were more like a tadpole or spermatozoön than anything else—possessing, as they did, an oval head with a tapering filament attached to it.

All these forms were characterized by an absence of pigment, which does not agree with other observations. It is possible, however, that the examination of a larger number of cases may result in the discovery of intra-corpuscular pigmented bodies, such as Osler describes.

Pigmented bodies were noticed in five cases:

1. Small corpuscles, about the size of a leucocyte, containing dark-brown pigment granules, distributed evenly throughout the cell.
2. Bodies two or three times the size of a leucocyte, containing similar granules of pigment, but arranged around clear spaces.
3. Pigmented bodies, showing amœboid movement.
4. Amœboid bodies containing large masses of black pigment. These bodies differ from those just described in the character of the pigment, which is in masses instead of fine granules; they are probably the phagocytes on whose scavenging properties Carter lays so much stress. It is possible, however, that all these forms are merely different stages of the same body. The pigmented crescents or spheres described by Laveran were not met with.

With reference to the time of occurrence of these bodies, it may be observed generally that the intra-corpuscular forms were present before the paroxysm and while the temperature was rising, and usually disappeared under treatment; while the pigmented bodies were found at all stages, but persisted for a considerable time after the attack had ceased. In one case the whole of the bodies were found; in one rods, clear spots, and pigmented bodies; in one rods, vacuoles, and pigmented bodies; in two vacuoles and tadpole bodies; in three vacuoles only; and in two pigmented bodies only. The effect of quinine in the cases in which examinations were made appeared to be the disappearance of the intra-corpuscular bodies. These observations, then, are of value as corroborating, to some extent at least, the results obtained elsewhere.

As regards the efficacy of quinine in the treatment of malaria, the author considers it the only drug which can be relied upon. Considerable stress is also laid on the influence of the state of the liver on the action of quinine. Thus: "It has been pointed out that quinine forms a salt with the bile which is sparingly soluble, and in practice it is frequently found that it is useless to administer quinine, and, in fact, that it has a distinctly prejudicial action, until the liver has been acted upon by a large dose of calomel or blue pill, which may even have to be repeated before satisfactory results are obtained. I have before me the records of several cases where a cholagogue had to be administered twice or thrice before there was any improvement in the condition. We must remember that we have to deal not only with the malarial organism, but with the results of blood-destruction which themselves are sufficient to cause a rise of temperature, as seen in cases of paroxysmal hæmoglobinuria at home, and in the febrile attacks of pernicious anæmia. The liver, which appears to be the main element in the removal of these morbid products, eventually becomes loaded with them, which is seen on examination in the altered condition of the liver-cells. These are found to be filled with a fine yellow pigment, which is quite different from the melanæmic pigment, and which has quite different microchemical reactions, blacking with ammonium sulphides, and giving the Prussian-blue reaction on the addition of potassium ferrocyanide and dilute hydrochloric acid. It is evident, therefore, that until we assist the liver in getting rid of these morbid products other treatment will have little effect. Quinine can only be regarded as a poison to the malarial organism, killing it and preventing its further development. There are, no doubt, certain cases in which quinine entirely fails; but they are rare, and I believe are not pure cases of malarial fever, but probably associated with some obscure complication often connected with the state of the intestines."

Quinine in small doses taken over prolonged periods is recommended as a prophylactic. The treatment of the cachectic condition found in tropical climates is another matter. The condition more nearly approaches that of pernicious anæmia, and the most useful drug is arsenic in large doses, or, better than any medicine, removal to a cooler climate. Antipyrine and sulphonal have also been found useful adjuncts.

AN EPIDEMIC OF GASTRO-INTESTINAL CATARRH.

DR. G. M. LOWE, of Lincoln, refers to an epidemic of this complaint which occurred at the conclusion of the severe frost experienced last winter. According to observations in his own practice the affection occurred only among adults, the symptoms being epigastric pain, vomiting, frequent copious feculent discharges of a successively whitish-green and yellow color; sometimes considerable tenesmus, a dull yellowish color of conjunctivæ; the tongue furred, moist, and viscid; temperature seldom above 102°; anorexia, and great nervous prostration. In no instance any mucous, bloody, or typhoid stools. Complications were: jaundice in 3 cases, severe labial herpes in 7 cases, and bronchitis in 2 elderly persons, who both died; 132 recovered.

Two possible causes are discussed, viz., rapid and great alterations of temperature and pollution of drinking-water, the writer inclining, on the whole, to the former view.

[At the same time cases of an altogether similar type were very prevalent in London.—ED.]

INFLUENCE OF CARBOHYDRATES UPON PROTEID METABOLISM.

To determine if the loss of flesh which occurs in cases of diabetes is due to a failure of carbohydrate-metabolism, GRAHAM LUSK, Ph.B. (*Zeitschr. f. Biologie*, Bd. xxvii. p. 459), has endeavored to ascertain if a person in normal health, from the diet of whom the carbohydrates were withdrawn, would present the increase in proteid and fatty metabolism that takes place in diabetic patients. With this end in view, he partook, for three days, of a known amount of albuminoids, fats and carbohydrates; and, for another three days, of the same quantity of albuminoids and fat as in the first experiment, but omitting the carbohydrates; in each instance determining the amount of nitrogen excreted in the urine and feces. As a result, he found that, under the latter conditions, the amount of nitrogen eliminated was 36 per cent.

greater than under the former. Repeating the experiments, using in both, however, less than half the amount of nitrogen used in the first series, he found that the amount of nitrogen eliminated was greater than that ingested, the amount eliminated being increased 32 per cent. when carbohydrates were withheld. The inference is that the omission of carbohydrates from the food brings about a marked increase in proteid metabolism, and, conversely, that the destruction of carbohydrates tends to protect a certain amount of albuminoid matter. The excessive elimination of nitrogen, shown to take place in cases of diabetes, may be explained by the excretion of sugar in the urine, and it is highly probable that the failure of sugar-decomposition in the system is the cause of the loss of flesh. That the amounts of oxygen consumed and carbonic acid given off by diabetics and healthy persons, under conditions otherwise similar, are respectively alike, is indicated by the fact that the number of heat units produced to the cubic metre of body surface is the same in both. The oxygen used in health to burn sugar is in the case of diabetes used in the destruction of fat, of which destruction there is said to be a relative increase.

POTASSIUM CANTHARIDATE IN LUPUS.

SAALFELD (*Deutsche med. Wochenschr.*, March 12, 1891) presented a case of lupus, in which, after five injections of potassium cantharidate, the masses were reduced in size and paler than before.

LANDGRAF did not find the course of acute affections of the larynx shortened by the use of the remedy. From the results of its application in five cases of chronic disease, he concluded that its use, even in small doses, gave rise to an inflammatory œdema of the laryngeal mucous membrane, which disappeared rapidly.

LUBLINSKI had treated sixteen cases of pulmonary and laryngeal tuberculosis of moderate severity, with a varying number of injections. The application of the remedy is painful in most cases, and more painful from the use of the potassium than of the sodium salt. In two cases, strangury occurred after the second injection; in one, after the third. Neither albumin nor blood was found in the urine. In one case the sputum became blood-streaked for the first time after the third injection; in another after the fourth. Some patients felt a sense of warmth in the throat. The majority stated that the cough was looser and the expectoration freer. After the second, third, or fourth injection, the seat of the disease in the larynx appeared hyperæmic and covered with thin secretion. In one case there was dysphagia. The infiltration, especially of the inter-arytenoid fold, receded in most cases, and the voice improved. In one case, an inter-arytenoid ulcer, and in another, after seven injections, ulceration of the right vocal band healed; in a third case, after two injections, an ulcer at the free margin of the left band became progressively smaller; in a fourth, an arytenoid ulcer had almost entirely disappeared, after four injections had been made. In a case presenting, in addition to pulmonary and laryngeal tuberculosis, lupus of the dorsum of one hand, it was stated that the pains of the latter had disappeared after the fourth injection.

CANTHARIDIN.

Conceiving that the transudation of serum from a healthy capillary caused by cantharidin would be greater from a vessel in an abnormal condition, LIEBREICH (*Deutsche med. Wochenschr.*, March 5, 1891) endeavored to determine the dose which would cause from capillaries of lowered resistance the same degree of exudation as occurs from normal vessels after larger doses. The results he reported at a meeting of the Berlin Medical Society. If the hypothesis is correct, some influence would be exerted upon pathological processes resulting from local irritation of bacillary or other nature. One-fiftieth of a milligramme of potassium cantharidate was injected into the back of a patient with a tumor of the œsophagus. Expectoration became easy and was increased as the dose was increased. It was determined that 0.0006 was the most that could be given without causing local phenomena, while there was strangury and the urine contained blood. The most suitable dose was 0.0001 or 0.0002. In cases of laryngeal tuberculosis, marked improvement in the voice was perceptible after the second injection. The patients may continue their occupations. The injections are made on alternate days. The bladder and the rectum must be looked after. Diarrhœa or burning micturition indicate a withdrawal of the injections. The remedy is prepared by dissolving 0.2 gramme of pure cantharidin and 0.4 gramme of potassic hydrate in 20 c.cm. of water, and heating in a water-bath until a clear solution results. If sufficient water is added to make a litre, every cubic centimeter contains 0.0002.

HEYMAN reported that he had observed striking improvement in the voice and in the general condition in severe cases of laryngeal tuberculosis, usually after the third or fourth injection, given daily. No influence upon the number and appearance of the bacilli was observed. In three cases the râles had diminished or disappeared. In one case the area of dulness had diminished, expectoration became easier and less frequent, the sputum thinner, and the cough moderated in frequency and intensity—in four cases it almost entirely disappeared. Night-sweats occurred less frequently or ceased. Redness and infiltration of the larynx diminished. The granulations became pale and flat; the ulcers cleared up and became smaller from the periphery. A number of well-defined ulcers had healed; others were in process of cicatrization. In some of the worst cases acute exacerbations occurred. Rapid improvement was also observed in a number of cases of catarrhal affections.

B. FRÄNKEL has treated fifteen cases, mostly severe. He found the injection painful, though submitted to by the patient, the pain disappearing in a day or two. The usual symptoms following the internal administration of cantharidin were observed—strangury and tenesmus. The general condition improved, the voice returned, infiltration receded, and ulcers cleared up and healed.

A METHOD OF ACCELERATING DESQUAMATION AND THEREFORE OF SHORTENING THE INFECTIVE PERIOD IN SCARLATINA.

DR. W. ALLAN JAMIESON, of Edinburgh, advocates the use of resorcin on account of its well-known action of causing the outer layers of the epidermis to separate without injury to the deeper ones. A 3 per cent. resorcin-salicylic-superfatted soap was employed, and when used, with warm water, from the commencement to the close of desquamation a notable diminution in the period of "peeling" was observed.

From the consideration of a large number of unselected cases the conclusion has been arrived at that, while the commencement of desquamation may be as early as the fourth day of the disease, or may, in exceptional instances, be delayed as late even as the sixteenth, the average day on which it is first visible is the ninth. Again, from the onset of the disease till the completion of desquamation in sixty-two unselected cases the average was 55.5 days, no treatment having been employed to interfere with the natural process. But when washing with the resorcin-salicylic soap was begun as soon as signs of desquamation could be noticed, or shortly before, the desquamation was entirely completed in 40.26 days. There is thus a gain, on the average, of more than a fortnight. In two cases washing with the soap was practised on only one side of the body, a commencement being made in one three, in the other four, days prior to the appearance of any trace of scaling. In the case in which the right side was washed, peeling began on the right palm, and then subsequently on the right side of the trunk and limbs; in that in which the left side was so treated, the left palm, then the left side of the trunk and limbs, showed the earliest indications of desquamation. In all cases it was found advantageous, after washing with the soap and drying the body, to smear on a small quantity of some bland oil, such as olive, almond, or purified whale oil. The nurses, too, found it necessary to protect their hands with India-rubber gloves, or to use a sponge carefully in washing the patients, else their palms became tender from a thinning of the epidermis. Such of the patients, also, who were old enough or far enough advanced in convalescence to wash themselves, noticed that the hand used in washing desquamated earlier than the other.—*Lancet*, 1891, No. 3550.

CONVULSIONS AS A CAUSE OF CEREBRAL HEMORRHAGE IN EARLY LIFE.

DR. HENRY ASHBY, of Manchester, reports a case which, in his opinion, strongly supports the view that a series of convulsions may give rise to a multiple hemorrhage.

A boy, aged twelve years, was admitted to hospital suffering from tuberculosis and old hemiplegia. He was well and strong until two years old, and free from hereditary taint. At this time he had a fit, followed by unconsciousness for ten minutes, attributed to eating pie-crust. Two weeks later he had another more severe fit, lasting half an hour, affecting especially the right arm and leg. After this the right arm hung useless, and he dragged the right leg in walking. Both limbs have recovered to some extent, but have remained more or less stiff and rigid. From this time until ten years of age he had two fits a week on an average. There was no evidence of mental weakness. He died of tuberculosis in February, 1891. The brain was examined on the following day. The outer surface was normal everywhere.

A section made exposing the lateral ventricles, without slicing the corpus striatum, showed an old cyst with brownish contents, ⅝ inch in length, situated on the left side in the white substance between the fissure of Rolando and the corpus striatum; and four small cysts, situated on the right side in the white substance. One cyst was apparently about ½ inch in depth. There was no sclerosis or induration in the neighborhood of the cysts. A third section, made lower than the above and on a level with the upper surface of the cerebellum, and slicing the optic thalamus, caudate nucleus, and internal capsule, showed the lower limit of the cyst just described, a second old blood-cyst, and another small one. Another similar cyst was found in the white substance of the frontal region at a lower level.

Sections of the cord made in the cervical, dorsal, and lumbar regions did not show any sclerosis or wasting of the descending tracts, neither was there any wasting of the internal capsule or crura.

In reviewing the history of the case in the light of the morbid anatomy, there seems to be little room for doubt that the initial convulsions were the cause and not the consequence of the multiple hemorrhages. It is hardly conceivable that these should be caused by any thrombosis, embolism, or arteritis; they must presumably have been due to a sudden engorgement of the veins due to asphyxia, in consequence of spasm of the respiratory muscles.

Cases of this kind are by no means uncommon, and the view put forward in this communication has been expressed by several recent writers, among others by Goodhart, Osler, and Angell Money.—*Practitioner*, 1891, No. 276.

THE INFLUENCE OF DISEASES UPON THE RESPIRATORY INTERCHANGE OF GASES.

To determine if disturbances involving the exchange of gases between the air and the blood, and if anomalies of tissue metamorphosis in conjunction with which the need of oxygen or the capability of the tissues to unite with oxygen may be altered, do in reality materially influence the respiratory interchange of gases, KRAUS and CHVOSTEK (*Wiener klin. Wochenschr.*, Bd. iv. 1891, p. 33) made forty observations in twelve persons with various forms of anæmia (pernicious and secondary anæmia and chlorosis), leukæmia, and the carcinomatous cachexia. Under ordinary conditions no aberration from the normal was observed in the gaseous interchange. The taking of nourishment invariably augmented the interchange, as happens also in healthy persons during digestion. In a small number of cases muscular activity increased the combustion of oxygen and the production of carbonic acid, but not in the same degree as in health; in the anæmic patients, the respiratory coefficient (which normally arises) was lowered.

To determine the activity of the bodily oxidation, benzole was administered to six patients with diabetes, anæmia, carcinoma of the stomach, and leukæmia, and the quantity of phenol excreted was measured. The proportion of phenol was found small in conditions of impaired nutrition, but no special change was observed for any single affection.

In investigating the influence exerted upon the respiratory process by an increased volume of oxygen in the inspired air, an admixture of ten volumes of nitrogen and ninety volumes of oxygen was used. The subjective condition of healthy and ill persons was not materially influenced by the continuous breathing of such a mixture; nor did objective manifestations appear. During the first ten minutes of easy breathing a considerable increase in the comparative quantity of oxygen absorbed was noted; subsequently the absorption of oxygen fell to the normal or lower. That this primary increase took place in anæmic patients with a decided deficiency of hæmoglobin makes it evident that the excess of oxygen taken up combines with the tissues. For a short time at the beginning of the experiment the exhalation of carbonic acid was increased, though not in the same degree as the absorption of oxygen. These observations indicate that there is no more substantial basis for the employment of oxygen in disease than has hitherto existed. Clinically, inhalations of oxygen were inefficacious. The most important indication for such a measure would be the sudden occurrence of respiratory insufficiency.

SURGERY.

UNDER THE CHARGE OF
J. WILLIAM WHITE, M.D.,
PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE UNIVERSITY AND GERMAN HOSPITALS;
ASSISTED BY
EDWARD MARTIN, M.D.,
CLINICAL PROFESSOR OF GENITO-URINARY SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE HOWARD HOSPITAL AND ASSISTANT SURGEON TO THE UNIVERSITY HOSPITAL.

SURGICAL TREATMENT OF PILES.

On the basis of 200 cases of operation on hemorrhoids, ALLINGHAM (*Medical Press and Circular*, 1891, No. 2724) discusses the surgical treatment of this disease.

He divides hemorrhoids into two groups: the first including those which come down at stool, and those which are almost always in a state of prolapse and bleed profusely at each act of the bowel. In this class of cases the quickest operation is the best, since as a result of long-continued hemorrhage there is always considerable anæmia, and therefore it is of prime importance that as little blood as possible should be lost from the operation, and that there should be a minimum of risk of secondary hemorrhage. These requirements are fulfilled by the ligature, which can be applied in a very few minutes and is practically free from any danger of after-hemorrhage.

The second group comprises those piles which are chiefly troublesome because of the inconvenience they occasion, since they are prone to come down and prevent the patient taking any active exercise. These piles rarely bleed and do not otherwise interfere with the enjoyment of good health. Here the great point is to select the least painful operation. The best modes are crushing or simply cutting off the piles and picking up any vessels that may bleed.

In the operation of ligation with incision the pile is drawn down by a vulsellum and separated from the muscular and submucous tissues upon which it rests. The incision is made upon the skin at the junction of the